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TIC

A MAGAZINE FOR
DENTISTS
DENTAL HYGIENISTS
DENTAL ASSISTANTS

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January 1960 Vol. XIX No. 1

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ARABIAN NIGHTS IN DENTISTRY

TIC begins in this issue the serialization of a new edition of a most successful piece of popular dental literature — *Arabian Nights in Dentistry*.

Each chapter will deal with an important aspect of dentistry of proven interest to dental patients, and will be complete in itself.

Each installment will appear in the center pages of the magazine —pages eight and nine—making it readily available.

Every chapter will be beautifully illustrated by one of America's most talented young artists—Edward Kasper. Mr. Kasper has also been commissioned to do a special cover each month to dramatize the theme of each chapter in the series.

All of the text in *Arabian Nights*, although entertainingly and excitingly written for a lay audience primarily, is authentic. It has been checked by distinguished dental authorities and educators. This new edition of *Arabian Nights* was especially prepared to meet the many requests for it from dentists all over the United States.

For you and your patients, Doctor, TIC starts today the 1960 edition of this story about you and your profession, completely new. It begins on page eight. We hope you and your patients will enjoy it. Happy New Year!

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When the atomic powered submarine became a reality several years ago, there was thrust upon the scientific world a "space ship for inner space." The true submersible and the sealed space ship have in common a condition of prolonged confinement which presents formidible problems of environmental medicine. One of the fundamental problems facing workers in both fields is the lack of knowledge concerning the extent to which man is dependent upon the natural composition of the earth's atmosphere. The submarine is affording us an excellent opportunity to solve some of these problems before putting a man into space.

The advent of the International Geophysical Year, with the decision of many nations to maintain bases in Antarctica, presented a second opportunity to study phases of environmental stresses. These stresses were related particularly to prolonged isolationism, lack of communication, changes in diurnal cycles, confinement of small groups of men for many months, food preservation and diet, in addition to severe cold.

For the past five years, dental and associated problems of the true submersible have been under study by the dental profession and, for the past three years, dentists have "wintered over" at bases in Antarctica. Information gathered from these two sources is being correlated in an overall study called the "Effect of Stresses of an Unnatural Environment on Oral Health." It is hoped that knowledge gathered from these sources will help solve some of the problems of space travel and living.

Problems of Life in a Closed Environment

The harnessing of atomic energy and its utilization as a unit of submarine propulsion was a spectacular engineering development. The secrecy surrounding the development of the atomic bomb and the rapidity of the development of a workable atomic engine resulted in the building of a true submersible but presented problems in physiology and biology which could not be readily answered. Scientists in these fields did not know what tolerance limits or time-concentration ratios of atmospheric contaminants man could withstand.

In the closed environment of this underseas space ship, things that were never considered problems now became problems of

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the first magnitude. Every day household items presented atmospheric contaminants which, potentially, could reach lethal levels. Shoe polish, paint, paint thinners, mercury on mirrors and in thermometers, insect sprays, benzine in lighter fluids, acrolein from the fat in cooking, Freon from air conditioning systems and shaving soaps, smoking, with its production of carbon monoxide, and even breathing, with carbon dioxide as an excretory product became potential sources of trouble. Still other problems that required study were the effects on the physiology of high CO_2, low O_2, variations in pressure, nitrogen, ozone, trace substances, heat and cold, radiation, prolonged confinement, changes in diurnal cycles and diet. In addition, there are those problems peculiar to the space vehicle itself—the gravity free state, acceleration, and sensory deprivation. This, of course, is but a partial list of known sources of trouble. Every attempt is being made to anticipate further potential sources and time alone will tell how thorough is our reasoning.

Dentistry's Role in Solution of Problems

The dental profession has a dual role in the search for answers to the problems of life in an unnatural environment. It first must solve and answer those problems that are specific to the oral structures but, secondly, it can and must assist the physiologist and biologist using the oral structures as a tool for diagnosis.

In the work already accomplished in the study of the "Effect of the Stresses of an Unnatural Environment on Oral Health," a foundation has been laid, by working with submarine and Antarctic personnel, to satisfy dentistry's dual role. Work already completed can be briefly summarized.

Submarine personnel:

1. Cariogenic rates.

An 18-month study was made to compare cariogenic rates of men in submarines with men living either on surface craft or ashore. The men living for the most part in a closed enviornment, as compared with the control group, showed almost a 100 percent increase in cariogenicity as determined by the DMF Index. The mean ratios showed an increased DMF (teeth) of 1.28 in the control group as compared with 2.46 in the experimental group over the 18-month period. When tooth surfaces (DMF-Surface) were compared there was an increase of 5.76 surfaces in the control group and 8.29 in the experimental group.

2. Soft tissue health.

Gingivitis as expressed by the PMA Index was also studied in these same two groups over the 18-month period. Once again the men in submarines showed an alarming increase of gingival inflammatory conditions. When the PMA Index was used, taking into consideration only the areas involved (PMA-A) and not changes in the severity of the inflammatory conditions, the mean change in the control group was +1.36 areas; the experimental group showed an increase of +6.25 areas. If the severity of the inflammatory conditions was noted the differences between the two groups were even greater. Expressing severity as PMA-T, the control group mean increase was 2.28 while the experimental group was +7.83.

3. Atmospheric contaminants.

Oral detection of mucous membrane changes due to atmospheric contaminants is a dental responsibility. In a recent cruise of an atomic powered submarine, men began to complain of burning of the lips and oral mucous membranes. Alerting the atmospheric analysts, it was discovered that Freon had been escaping into the vessel from the air conditioning system. The amount of Freon in the air, however, was still below what was considered tolerance limits for personnel. Available literature at the time stated that the potential danger of Freon was its breakdown and formation of phosgene at high temperatures. The heat necessary for this process was attained only through such things as a welding torch which, of course, would not be used in a submerged submarine. Further research into Freon's chemistry, however, showed that at much lower temperatures (300-500°F.) Freon breaks down into the gases hydrogen fluoride and hydrogen chloride. Dissolution of these gases in the moisture of the mucous membranes produced strong acids causing mucous membrane irritation. This knowledge led to the eventual welding of all joints in air conditioning systems to prevent Freon escape.

4. Aids to physiological problems.

Dentistry has also assisted the physiologists. Through the use of the information given to us by Dr. Isaac Schour of the University of Illinois concerning the growth and calcification of the rat incisor and by the microcalcium technics perfected by Dr. P. L. Munson of Harvard Dental School, we were able to show that carbon dioxide acts as a stimulant to the parathyroid gland. Changes were illustrated in the metabolism of serum calcium and phosphorous and histologic changes were shown to occur in the calcifying tooth structure.

In the course of these studies on calcification, an interesting observation was made on animals that had lived for varying lengths of time in an atmosphere enriched with CO_2 and then allowed to recover on room air. The recovery period was accompanied by severe reactions of accommodation as indicated by the histologic changes occurring. These disturbances appeared more severe than anything seen associated with the contaminant phase of the experiment. It has led to a new tangent of work to

determine whether personnel exposed to an atmosphere containing an increased CO_2 content should be "degassed" in the same slow manner a diver is decompressed upon coming to the surface from the ocean depths.

Antarctic personnel

For the past three years, five dentists have "wintered over" in Antarctica. They have been collecting data not only on problems that are strictly dental but have gathered a wealth of material to assist the physician, physiologist, psychologist, bacteriologist, and nutritionist. Only the first year's work has been completely analyzed. Results of the second year's study are partially completed but information on the third year will not be returned until next spring.

1. Dental selection

The need for better methods of diagnosis of dental health prior to a prolonged isolated task was dramatically pointed out when even after careful selection prior to leaving the United States 89 of 92 men sought dental treatment during their 14 months on the ice. As the work became more tedious and the winter night progressed, as many as 51 percent of the men were under treatment at one time.

2. Toothaches and cold air.

Toothaches due to the rapid temperature changes (+60° to −60°F.) were common. In most instances they were due to improperly placed fillings or improper preparation of teeth prior to arriving in Antarctica. Frequently, necks of teeth exposed by gingival recession were so sensitive to the cold that cavities were prepared and filled with an insulating cement.

3. "Dry Socket"

Alveolar osteitis was a problem. Lack of postoperative healing occurred in over 22 percent of extractions in the first year. During the second year of study of this problem men were retained in sick bay and not allowed to venture into the cold for 24 hours. This reduced the incidence of alveolar osteitis to 4 percent. This was still considerably over the 0.9 percent as reported to be the national incidence by the University of Pittsburgh School of Dentistry. Healing of other wounds was also somewhat retarded. We now believe that this high percentage of alveolar osteitis is due to basic changes in the blood clotting mechanism as a result of cold acclimatization rather than bacterial invasion. A complete hematologic study of this problem is under way at present.

4. Viral and bacterial infection.

Bacterial infections offers practically no problems. There appears to be an attenuation of bacteria due to the cold in addition to the development of an immunity to each other of the persons within the group. Colds and infections of bacterial origin become almost non-existent after four or five months of isolation but recur in most violent proportions upon the return of "outside" personnel to the isolated group.

One item of importance from the oral standpoint is that even though bacterial infections seem to cease and the virus of upper respiratory infections is inactive, oral mucous membrane ulcers occur with increasing severity as the period of isolation increases. The organism has not been isolated but the question arises as to whether there would be developed a strain of virus through inbreeding and self-inocculation more virulent than anything we now know.

Working as a team, Lt. Robert J. Adams, (DC) USN; T. King, Ph.D.; Capt. Stanmeyer, the author, and Marcum N. Nance, DTC, USN (Chief Dental Technician), do a heart puncture to collect blood for study of effects of environmental changes on calcium-phosphorus metaolism. Histologic studies of the teeth, parathyroid glands, and other endocrine glands round out the study.

5. Bacterial activity.

Cariogenic activity has not been entirely assessed. It is known though, that when personnel are exposed to severe low temperatures the acid producing of oral bacteria decreases. This was determined by measuring acid production rates in dental plaques after carbohydrate rinses when working outdoors at temperatures as low as −57°F. The numbers of oral lactobacillae also decrease during these cold work periods, probably through depression of bacterial activity and salivary dilution.

6. Vitamin tolerance.

Diet and dietary supplementation are important factors to the dentist in maintaining oral health. In submarines, Antarctica or space vehicles, food, its preservation, preparation and consumption are items of prime importance. Loss of vitamin content could cause serious general as well as dental disorders. A series of vitamin tolerances tests were per-

formed measuring the B-complex and C vitamins to accurately determine an individual's need in terms of vitamin supplementation during long periods of isolation without fresh provisions.

7. Non-specific stresses.

Since World War II, psychosomatics in dentistry has played an ever increasing role in diagnosis. It has been suggested that various oral soft tissue lesions now occur through lowering of tissue resistance brought about by disturbances in one's equanimity. To determine what effect prolonged isolation, severe cold, six months of night followed by six months of daylight, and close habitability with the same group of men had on oral health, a "health questionnaire" was prepared with the cooperation of psychologists. It was completed by the men monthly as part of a routine dental examination. They were questioned in nine broad fields ranging from questions almost purely psychological to those strictly dental. Since this test was administered as an adjunct to dental treatment and since it was filled out by the men without resistance, the opinion has been given by a prominent psychiatrist interested in problems of isolated living, that this test may result in the only valid measure from which psychological interpretations can be made over the past two years for men living in Antarctica.

Through 350,000 responses given to 68 questions on man's reaction to the stresses of prolonged confinement in an unnatural environment, where six months of darkness follows six months of light, we hope to better our knowledge of man's reaction to the total darkness of outer or inner space.

Dentistry's Continuing Contribution

Information gathered from submarines and from Antarctica is still being processed. However, problems already known must be solved. To this end, several associated experiments are under way. In an attempt to explain the increased cariogenic rates of men living in the closed environment of a submarine, the rate of caries formation is being studied using but one of the probable exciting causes at a time. Carbon dioxide, increased noise levels, loss of periods of light and dark are being studied as forerunners of cariogenic activity.

In like manner these probable exciting causes are being studied to determine what effect they have on tissue resistance and tissue repair.

The work being done in Antarctica on changes in blood both from a biochemical and cellular standpoint, should be invaluable in determining what effect living in an unnatural environment has on man.

Problems Yet Unstudied

1. Selection of personnel.

Sir William Osler once said that the oral cavity was a mirror of the rest of the body. The condition of the teeth and soft tissues tells us more than the present state of a man's health. We should work closer to the psychologist in the selection of personnel for initial studies in space since, from the condition of these oral structures, we see man from six years of age to the present. Insights into the subject's tenacity of purpose, thoroughness of self-care, respect for physical fitness and probably fear of pain are all interpretations that can be extracted from a good oral examination.

2. Diagnosis.

Better methods of diagnosis of pulpal and periodontal health are also necessary. The gross methods presently used of assessing dental health are entirely inadequate for long periods of time in an enclosed environment. We must be able to more accurately diagnose sub-clinical changes in the pulp and periodontium that may cause trouble under stress. In recent studies we have discovered that such small things as changes in environmental pressure may cause acute exacerbation of conditions that could not be diagnosed under presently available methods and technics. In one instance an operating submarine had to withdraw from exercises because of a toothache, resulting from a rapid change in pressure, which was suffered by one of the members of its crew. A complete dental examination made on the subject shortly before this incident had not revealed the potential source of pathology.

3. Dental treatment.

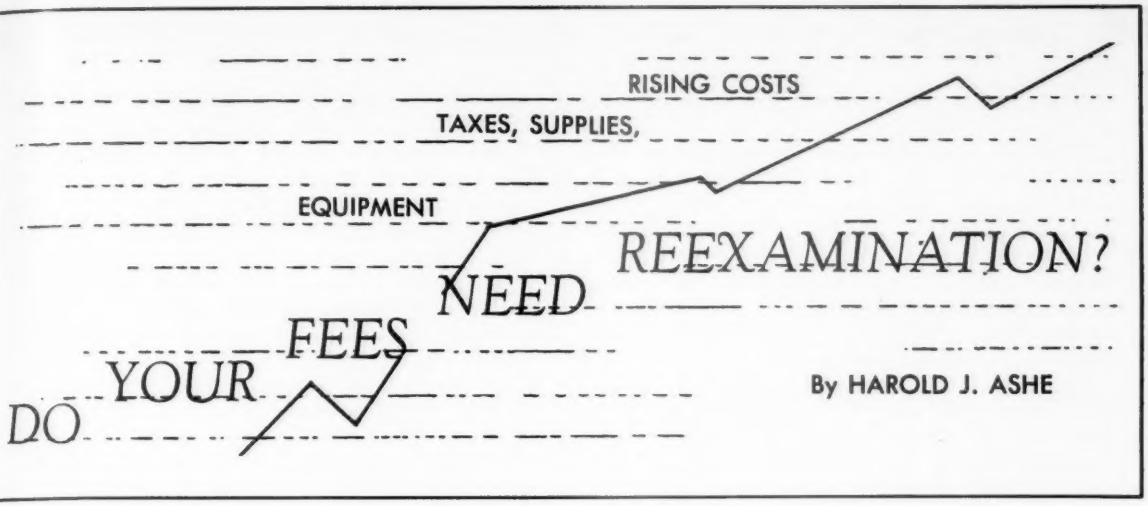
Operative dentistry must also undergo critical analysis. Prepartion of cavities must be accomplished without excess heat and vibration which might lead to pulpal destruction under increased gravitational stress. Filling material must be carefully manipulated or better ones manufactured to withstand invasion of cold, pressure changes, or traumatic stresses. What may be entirely adequate for normal living is not good enough for the Space Age.

Periodontal health must be maintained. It is entirely probable that space travel will involve capsule meals where teeth are unnecessary. Education and instruction of space personnel becomes essential to prevent periodontal of temperomandibular trouble through the atrophy of disuse.

BONANZA

I've found that priceless treasure
For whom each dentist yearns:
A top-notch nurse who also is
A whiz on tax returns.

Mildred Ricks



By HAROLD J. ASHE

If professional net earnings aren't to be shaved this year, a good many dentists may need to critically reexamine their long-established fee schedules. Many items of professional expenses have risen in the past year and new increases are inevitable in the next 12-month period.

Some dentists have been able up to now to absorb their increased professional expenses without suffering a decline in their net earnings. This has been possible because their practice has been growing, year by year, and serving as an offset to mounting costs. However, this is a dubious device for meeting increased expenses. It means these dentists have been serving more patients, having larger gross receipts, without any material increase in net earnings.

Other dentists who have reached a peak beyond which gross receipts cannot further be pushed upward by serving more patients may see net earnings gradually decline. The prevailing fees can no longer absorb mounting overhead and continue to return the same annual net earnings. Increased professional expenses reduce net earnings.

In his preoccupation with rendering professional services, a dentist may be only dimly aware, if that, of how much some expenses have risen in recent years. Some items of expenses are negligible, considered separately. In the aggregate, however, several items of expense may be substantial. A rise in each item may materially increase overall costs. Major items of expense, such as supplies and materials, may be even more significant in depressing net earnings such as the size of a practice should warrant.

Dental equipment, too, continues to increase in cost. Because such equipment has a relatively long useful life, price hikes may go unnoted for years. Then comes a time when a dentist elects to replace aging equipment. He discovers with a shock the costs he had fixed in his mind, through earlier purchases, don't begin to reflect current price tags. And total depreciation charges deducted in his income tax returns on old equipment are insufficient for replacements. As a cost-of-doing business item, his depreciation charges did not reflect the realities of replacement costs.

If his professional fees, during the period of depreciating his old equipment, were insufficient to take care of replacements what happens? He must now dig up out of his limited net earnings funds for replacement, perhaps draw heavily on savings he had considered his.

Meantime, a dentist is periodically hit with property tax increases, either through higher rates or increased valuations, or both. If he rents his office, these tax increases are passed along in higher rent charges at lease renewal time. His lease may call for him to pay any property tax increases incurred by his landlord.

Sales taxes are moving upward in some areas, fractionally affecting the cost of supplies and other goods subject to tax. Business and professional licenses are becoming prime targets for new and additional revenue sources for city and county governments. Where once a "license" might cost $5 or $10, it may now be a "tax", by whatever misleading name, of $50 or $100 or more.

Utility rates are rising, making it more costly to heat and illuminate offices and operate equipment. Phone billings are up, particularly in metropolitan areas where calls are metered and zoned. Postage letter rates are up one-third.

There is pressure for salary increases because of mounting living costs and competition with other employers for competent help. The cost of office repairs is up.

Professional insurance is becoming more costly because of the size of jury awards and other factors. Larger amounts now must be carried against most hazards and liabilities.

Even the cost of performing civic chores, participating in community activities, is up. While, strictly

speaking, this is not a professional expense, it must be reckoned with by a dentist.

Meantime a dentist's own living expenses continue to mount. The result: If his net earnings remain stationary, year after year, he sustains a real cut in his take-home earnings. What's more, under such circumstances his individual income tax bill becomes harder to bear each year, even if the amount of his income tax remains constant. This is due to the fact that, as living costs rise, each $600 exemption becomes less and less valuable.

Despite these pressures, a good many dentists, deliberately or not, may be attempting to hold the price line. In doing so they fail to reflect the realities of the times in which they live and practice their profession.

As with other trades and professions, dentists are ethically warranted in looking over their fees, revising them upward, even if only slightly. This revision may be across the board, or some fees may be adjusted upwards while others remain the same.

In a typical practice, a very large part of gross receipts go toward meeting professional expenses. Because of this fact, only a slight increase in fees may have a significant effect on net earnings of a practice. If, for example, expenses constitute 40 percent of gross receipts, a 5 percent increase, across the board, will represent an 8 1/3 percent increase in net profits. A 10 percent increase will boost net earnings by one-sixth.

In the foreseeable future, there's no indication professional expenses are going to drop; quite the contrary. The only solution to a dentist's dilemma may lie in overhauling his fees (1) to absorb additional expenses and (2) to increase net earnings. A time-lag should not be tolerated in doing this. Adjustments should be made as often as mounting expenses indicate the need for so doing.

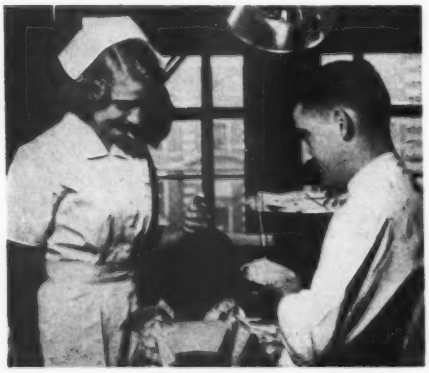
TRAINING HYGIENISTS AT IOWA STATE

Probably the most popular technical course for girls at the State University of Iowa is the dental hygiene program.

Given at the College for Dentistry the course was established in 1953 in response to the need for such training expressed by Iowa dentists.

The course covers three years and leads to the dental hygienist degree. A girl can enroll for the combined liberal arts and dental hygiene program, and upon graduation she will receive D.H. and B.A. degrees.

This year 75 girls are enrolled in the dental hygiene course.



If You Marry A Dentist . . .

By KAY LIPKE

A realistic young woman we know just announced her engagement to a student in one of our large dental schools, and was interested in getting some good straight facts.

Well, Realistic Young Woman, we will try to level with you and present a few rugged facts, from the viewpoint of a dental wife. To begin with, you will have to be an understanding wife, for dentistry is a very demanding profession. From the time a man enters dental school until he retires, dentistry commands his almost undivided time, energy, and attention. In fact, we might even go so far as to call it a jealous mistress brooking no rival.

Every conscientious dentist we know thinks, talks, and lives dentistry, not only in his office but at home as well. You will be amazed how many times you will begin a conversation with your dentist on a subject vital to you, only to discover a moment later that he is deep in a dental discussion. You might as well face it, part of his mind is on dentistry all the time.

His absorption in the health of his patients and his desire to improve his operating technic prompt him to be on the alert for new ideas—and he is constantly buying new expensive equipment.

All this is very good indeed for dentistry as a whole, and for his personal reputation as a dentist. You will be mighty proud of him, but occasionally you will be lonely also, for he cannot concentrate on you and the family problems and dentistry at the same time. Remember, he fell in love with dentistry before he fell in love with you. Furthermore, the family livelihood depends upon it, and it is a highly competitive profession.

Many a wife has been compelled to act as both father and mother to her children during periods in her dentist's life when he is absorbed in dental projects, and perhaps is holding office in local, state, or even national dental societies, is serving on committees, or is taking night courses for the improvement of his own dental technic.

There is one important flaw in the dental picture from a wife's viewpoint, and that is the inroads the dental profession makes in her dentist's nervous energy and physical stamina. Frankly, we feel that our husbands get much too tired. The fatigue with which they come home to us at night is not the normal weariness which comes to men in other types of work. The unnatural position in which they must stand, the strain of focusing their attention down at a tiny spot within the small area of the oral cavity, working on a highly nervous patient—all this can bring about an exhaustion which, in time, can take a grim toll of their health. This worries us greatly.

Not only does this fatigue stir our sympathetic concern, but it robs us of a degree of companionship as well. When a dentist comes home from a worrisome day at the office, he is apt to merely push his food around on his plate as if it were unfit for human consumption, while he looks ahead glumly and says nothing. If this happens in your home, you will find that it takes a lot of loving understanding to remind yourself that he isn't angry with you over something, nor does he think the dinner you prepared so carefully is not worth eating. He has just had a gruesome day and is no mood for food or lighthearted conversation.

There is also the fact that a number of us wives feel that our dentists are not adequately repaid financially for their long years of skilled dedication to their profession. It is such a proud profession. It contributes so much to the welfare of the human race. But it is an expensive profession as well. Anyone in the business world who spent the same amount of time, skill, and money in building up a worthwhile investment would expect to receive very fat financial returns indeed, not to mention the protection of pension plans to provide for the future. A dentist must provide for his own future.

Well, these are some of the rugged facts you asked for, Realistic Young Woman. However, don't let them depress you. They dwindle into insignificance when placed beside all the accomplishments, satisfactions, and rewards of a dental life for dentists, and for those of us fortunate enough to be their wives.

Personally, we would not have missed the experience for anything in the world, and we are sure you will feel the same when you have been a dental wife as long as we have. Congratulations—good luck—and Happy New Year!

1993 Lucile Avenue
Los Angeles 39, Calif.

THE WONDERS OF DENTAL PROGRESS

Arabian Nights In Dentistry

IN HIS ATTAINMENT of ambition, accumulation of knowledge, satisfaction of curiosities and expression of ideas, man has traveled into foreign lands, created new methods of communication and travel, harnessed the latent energies of nature for his own profit and pleasure, and robbed labor of its physical and mental toil.

Ever restless and critical of his accomplishments, man has sought satisfaction for unfulfilled dreams in the fantasies of fiction. These imaginative creations, at first a refuge, shortly became a spur to newer achievement. Ere long man's actual advances in the field of industry, science and art, exceeded the promises of fiction.

The progress so marked in the fields of commerce has been no less pronounced in the healing arts: medicine and dentistry. Dentistry, the younger of the two professions, has typified in its accomplishments the impatience of man to master circumstances.

Man has truly created his own magic lamp and called it "Progress." The wonders of dentistry and its achievements in its few brief years as a profession is the story of this book.

—Introduction to the First Edition

"SCIENCE HAS GRANTED FAVORS BEYOND OUR POWER TO ACKNOWLEDGE . . ."

ARABIAN NIGHTS

BOOK ONE: CHAPTER I

IN A SINGLE CENTURY, dentistry has established itself as one of the great healing arts of modern civilization. Today in the United States there are more than 100,000 men and women who have been scientifically trained in a network of some 50 dental schools that are the best in the world. These doctors of dental surgery and doctors of dental medicine provide the finest oral health services ever made available to mankind, and they are treating the largest number of people ever to benefit from professional dental care.

Dentistry has done more—much more.

It has given the human race one of its greatest gifts: anesthesia. Thus it has ended the most dreaded of all human experiences—pain. No longer is the amount of pain a patient can withstand a life-and-death test in surgery. Out of the development of anesthetics have come many miracles of modern surgery. In the last few decades, life has been saved, health has been restored, and pain has been conquered for millions of human beings the world over.

But dentistry has accomplished more.

To deal effectively with the whole range and impact of dental diseases, dentistry has trained seven groups of specialists. Today there are thousands of these dental experts especially equipped to manage the intricate problems of mouth and jaw surgery, diseases of the gums, oral pathology, children's teeth, denture design and construction, malformed teeth, and dental public health.

Dental scientists have tracked down relationships between dental decay and sugar consumption.

They have learned to measure decay activity by a count of bacteria in the saliva.

They have demonstrated that a trace of fluorine in drinking water will reduce tooth decay in children.

Dental researchers have developed enough scientific data about dental caries to justify the statement that, potentially, no child should ever lose a tooth from decay.

Oral surgeons have realized extraordinary success in restoring badly mutilated jaws and faces by using technics learned in battle stations in both World Wars.

Dental services have become as routine as medical services in a number of hospitals.

New instruments and new technics for the preparation of cavities are on the way to eliminating pain.

Standardization of materials and methods has reached such scientific levels that high-standard dentistry is now scientifically assured.

Modern dental medication now encompasses an imposing variety of drugs for the control of pain before and after operations, for alleviation of fear, for sedation, and for the control of infection. The dentist must now have a thorough knowledge of anatomy, physiology, pharmacology, pathology, and anesthesiology.

Dentistry has brought about the establishment of the National Institute of Dental Research.

Today dentures can have the coloring, the personalized teeth, and the individual characteristics of the patient's mouth to such a degree that artificial dentures cannot be distinguished from natural teeth.

Dental leaders have mapped out world-wide programs to deal with dental diseases, the most widespread of man's afflictions, which affect 96 percent of the world's nearly three billion people.

Dentistry has done much more.

It will do even more in the years ahead. This is why:

Dentistry has moved from the age of treatment in dental caries to the age of control.

Today in more than a hundred universities and research centers throughout the country scientific investigations are being carried out on as many oral health fronts.

Scientists are studying more effective means of treating cleft lip and cleft palate.

They are investigating ties between dental disease and rheumatic heart conditions.

They are probing factors associated with mouth cancer, and developing quicker means of detection.

They are looking into various afflictions that account for most of tooth loss among adults.

They are examining the effects of fall-out radiation on the human mouth.

They are studying improved methods of correcting facial deformities stemming from crooked teeth.

They are evaluating the relationship of nutrition to dental defects.

They are considering possible prenatal influences upon a child's dental development.

They are using every modern weapon, tool, and instrument—a veritable Buck Rogers' armamentarium—to unlock the riddle of dental decay. They are employing radioactive tracers, electronic microscopes, polarized light, and transillumination.

Modern American dentistry makes available to the average dental patient a level of dental care, comfort, and attractiveness that is the highest in history.

No profession has been more responsive to the needs of those it serves. The story of the progress to date of that fulfillment is the theme of this series, dedicated to the American dentist—the greatest dentist in the world.

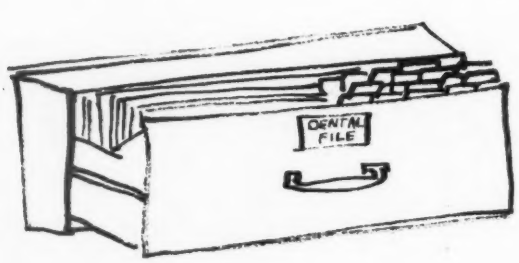
EFFECTIVE RECALL TECHNICS

By M. TRAVIS

A dentist practicing in a growing suburban community and a professor at a school of business administration have made a detailed study of the many suggestions that have been offered for operating a result-producing recall plan.

Their objective was to sift out all but the most practical ideas, and, as a result, they have decided on answers to such questions as: Is there any economy in limiting notices to only the not-too-regular patients? Which form of reminder, printed or individually typed, is better? Does it add to the good results when more than one recall notice is mailed? How may a plan be worked economically? The study also resulted in a variety of other practical conclusions.

ALL PATIENTS ARE HUMAN: The professor strongly vetoed the plan of mailing recall notices to only one class of patients. The exception, of course, applies to those the dentist has found undesirable from a professional or personal standpoint. He reasoned that a selective plan complicates the working of a recall system and adds to its cost. But more important, he points out, even a "good" patient may at times forget when he is due to return for a dental check-up. Also, there is one other important factor to consider. The patient is flattered by the thought that the dentist has not forgotten him and returns more willingly to the office where he knows he will be welcomed. This is true among "good" patients and equally so among the more forgetful ones.



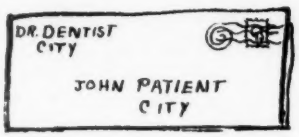
ONE MAILING OR MANY?: Both the dentist and the professor agreed during their study that it is asking too much to expect all patients to respond to a single reminder. They shared like opinions in deciding that following up the original recall notices is essential in all offices and particularly vital in a practice where the dentist has experienced considerable difficulty getting more than 50 percent of his patients on a fairly regular return basis.

After drawing on their experience and questioning a number of practitioners, the two investigators decided that in the case of a six-months' reminder that did not produce a call for an appointment, the follow-up should not be delayed beyond three months, with a second follow-up going out three months later—or one year after the patient's last visit to the office.

Because there are some patients who are still not convinced that it is essential to "see your dentist twice a year," the dentist and the professor feel that a third and perhaps a fourth follow-up may be in order. The third would go out after 18 months and the final notice in 24 months. As they view it, extending the recall over two years will draw in almost all patients who have any intention of returning to the office.

PATIENTS' PERMISSION: While the dentist has no professional obligation to ask a patient if he wishes to be placed on the recall list, there are some advantages to doing this. Patients who have been asked to express their personal reactions indicate that knowing they will be reminded tends to condition them for the recall and prompts a quicker telephone request for an appointment.

The dentist who worked on this study believes that a positive approach should be made in asking a patient. His suggestion is that the question be worded in this fashion: "You will want me to mail you a recall notice in six months, of course." Putting it in this way, he found, invites a positive response. It creates a wanted impression, and most patients accept such a suggestion and act on it.



PRINTED FORM VS PERSONAL NOTE: A printed recall card costs only several pennies and takes but seconds to enclose in an envelope. The individually typed reminder-notice requires more costly stationery, five or more minutes to type, and must be folded—after being signed—before inserting in an envelope. But the investigators gave a favorable nod to the typed message. However, in arriving at this decision, the men had in mind dental offices in which an assistant is regularly employed. A dentist working alone and with no typing speed qualifications could, they suggest, substitute a multigraphed note that would simply require the patient's name to be typed or handwritten at the top and the dentist's personal signature at the bottom.

The vote for the note form was swayed again by the possible reactions of patients. The typed reminder gives the impression of personal interest. It attaches importance to the suggestion that the patient telephone for an appointment. As for the matter of cost, the professor points out that recall success represents immediate dollar return for the dentist and improves the chances of keeping the individual patients on a regularly returning basis. These benefits, he argues, more than balance the extra pennies that go into what he considers the more resultful, typed message.

ECONOMICAL OPERATION: The major working "tool" of a recall system is a small-size box file—preferably 5 x 3 inches—with divisions for each month of the year and a dated separator for each day of each month. When a patient completes a series of appointments, his name is typed on a card together with the date of his last appointment, and this card inserted in the file under the six-months-in-the-future date.

Each morning the dentist, or his office assistant, refers to the recall file to determine what patients are to be mailed notices that day. A record of this reminder is added to the card and the card advanced three months in the file. Whenever a patient telephones for an appointment, his card is removed from the recall file and placed alphabetically with similar cards for re-use. Thus each card continues in service and gives facts on the patient's returning habits. In the average office this checking and filing should take no more than 15 or 20 minutes a day. The actual mailings will require varying time spans, depending on the type of recall notices used, as explained earlier.

In an office where there are occasional slack periods, the addressing of envelopes may be handled in advance of actual need. This anticipation by the dentist or his assistant eliminates the possibility of a crowded work schedule on a particular day that would make it difficult or impossible to send out the recall notices due for mailing on that date.

PRACTICAL INNOVATIONS: Investigation has disclosed that some dentists have improved the results of their reminder messages by including in each one a reference to a definite appointment day and hour decided upon by the dentist and patient at the conclusion of the patient's last appointment. In addition to specifying the appointment schedule, these notices request the patient to "Please telephone this office within the next two days to confirm this appointment." To allow time to fill in any appointments that may be ignored or changed at the request of the patient, the reminders are mailed out eight to ten days in advance of the appointment date.

One dentist who does not employ an assistant makes an attempt to personalize the printed recall cards he uses by signing each one personally and adding "Thank you." He, too, anticipates his need for cards by signing a quantity in advance when he has a spare moment.

PROFITABLE SIDE BENEFITS: Most dental practices are built on recommendations of patients who send their friends, relatives, and co-workers to see "my dentist." These referrals are proportionately higher among a practitioner's older patients, older in terms of the time they have been calling on him for professional dental care. Thus it follows that the more patients he keeps returning with some degree of regularity, the greater the dentist's chances of adding further to his list of patients. Viewed from this angle alone a well-planned and carefully worked recall system quickly and profitably compensates the dentist for his investment of dollars, time, and materials.

And while it may appear to the dentist that his efforts to return patients promptly are backed by selfish motives, these are not the only advantages. Patients benefit, too. Their dental health is maintained at a higher level. Corrective costs are likely to be less. And they enjoy the proved social and economic advantages that go along with regular professional dental care.

In arriving at their factual conclusions, the dentist and the professor have made available information of value to the profession and to the general public as well.

934 North 63 Street
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HOW TO STOP INFLATION?

WHAT ABOUT COLLECTING FEES FROM A NEW PATIENT?

SHOULD I RELOCATE IN A PROFESSIONAL BUILDING?

Questions Dentists Are Asking

HOW DO I HANDLE REQUESTS FOR DONATIONS?

By CHARLES P. FITZ-PATRICK

There is a strong link today between the economy and many of the situations that are of major concern to dental practitioners. This is made evident by the queries voiced by dentists, and their interest in factual responses.

Some of these questions are reported here. The answers are intentionally designed to apply to average dental office operations.

Will an office in a professional building give me more prestige and permit me to increase my fees?

A dentist's reputation for creditable achievement is not based on the location of his office, and the higher fees he may charge after relocating in a professional building are likely to be canceled out by increased operating costs. Unless, of course, he can depend on a proportionate increase in the number of his patients.

Not too long ago most professional buildings were centrally located in metropolitan areas. Today there are many similar properties in suburban sections far removed from the center city. This shift is due to the movement of large sections of the population plus a more vital need for parking space for patients' cars.

The most profitable location for a dentist's office is one that is most convenient to most of his patients. The possible exception is the specialist whose best location is in the heart of the circle of dentists from whom he accepts referrals. Many of the specialist's patients do not see him on a continuing basis, but only at infrequent intervals. This makes his office location somewhat less of a problem than that of the general dental practitioner.

Prestige is built by a dentist through the excellence of his operating technics, the eye-arresting attractiveness of his office, his own professional appearance, and the efficiency of his assistant. These all help win the favorable attention of patients and in turn reduce resistance to slightly higher professional charges.

I complain about the dollar-robbing results of inflation but what can I do as an individual to check inflation?

Tell those who represent you in the state and national governments you expect their cooperation in reducing needless spending. Write them. Not just once but every time a questionable spending bill is up for their consideration.

Buy your personal, professional, and family needs with care. Insist on quality products and services that return the highest dollar value.

Step up the efficiency of your office operations by insisting that patients arrive on time for appointments and pay their bills promptly. This will help you keep your fee increases from moving beyond your patients' ability to pay.

And equally important, establish a saving schedule and stick to it. Make your family aware of the multiple benefits of "putting away a dollar." Nothing fights inflation like the money that is banked or saved in some other form, since it keeps the money from going out to compete for unnecessary products and services.

You will benefit personally from these inflation-fighting technics and also set an example and a pattern for others to follow with equal profitableness. The spread of such actions will strengthen your dollar and add to its purchasing power.

After I attended to the dental needs of a new patient, the man said: "I will send you a check later, doctor." That was more than a month ago.

How could I have prevented this?

Most credit problems, according to a reputable credit authority, are the responsibility of those to whom the money is owed.

When faced with a new patient, one veteran den-

tist offers a rough approximation of the fees that will be involved in the patient's dental corrections. He then asks: "How would you like to pay for this, Mr. So-and-So?" This brings the fee question out into the open, and the response of the patient gives a hint as to how he views a financial obligation.

The practitioner who may be embarrassed by such a direct approach may accomplish a similar objective by limiting the dollar value of his initial operations on a new patient. As the patient steps from the chair he may be told, "That will be $0.00, Mr. So-and-So." This indicates that the dentist prefers a pay-after-each-appointment plan, but if the patient does not reach for his wallet he should be mailed a bill that day and his second appointment scheduled no closer than two weeks. This permits ample time for mailing a check prior to the patient's return.

The credit expert insists that in all cases the cost and payment procedure for major operations or corrections should be discussed in detail in advance. He is also convinced that the outside financing of such work is essential, unless the patient is well-known and has demonstrated his reliability in money matters.

A slow-paying patient is not only upsetting to the dentist but his delay reduces the practitioner's net return. When all factors—postage, stationery, office equipment, time, loss of interest, overhead—are figured into the cost of preparing and mailing each bill, the total will run to a minimum of 50 cents and may reach a dollar or more. This is a loss to the dentist, since he eventually collects only the amount of his original fee.

I am sometimes asked to contribute to a program or bulletin issued by a club, church, school or civic group. What is the best way to handle such solicitations?

An eastern dentist follows this practice. If he feels inclined to contribute to the sponsoring organization he asks the name of the director and mails a check with a note. In the note he explains that he does not wish any published credit for the donation. He also gives the name of the solicitor, since this may be a patient and may benefit that individual in some way.

Another practitioner belongs to a group made up of business and professional people that issues an annual roster in connection with a charity show. Members who are in business contract for advertising in this publication, but the dentist's contribution is his service. He arranges with the chairman to accept without cost two local youngsters who are in need of dental care. No publicity is given his distinct form of cooperation.

Whatever technic the dentist elects to apply in his own case, it will work more satisfactorily if controlled by a budget such as that set up by a young suburban dentist. This man determines the total he will give to now-and-then requests for donations and contributions to his church and to organized charity drives on the basis of a percentage of last year's gross.

He keeps a running total of the amount remaining in his budget so that just a glance at his record tells if he has been too liberal or if he can extend himself for a cause he knows is deserving. This method keeps his giving on a business-like basis and is helpful to the tax consultant who assists him when Uncle Sam holds out his hand.

3841 Aspen Street
Philadelphia 4, Pa.

"WE CAN'T TAKE YOU TILL NEXT WEEK; BETTER GET YOURSELF A BOTTLE OF WHISKEY."

DENTISTRY AND THE SEVENTH-DAY ADVENTISTS

By HARRY CIMRING, D.D.S.

Of the various dental groups that convene concomitantly with the annual meeting of the American Dental Association, the one whose title most provokes curiosity is the National Association of Seventh-day Adventist Dentists. Founded in 1943, NASDAD made news recently by launching the first issue of its own monthly *Journal*.

The Seventh-day Adventists, a native American church with a world-wide membership of slightly over a million, are so called because of their belief in the "Advent," or second coming of Christ, and their observance of sundown Friday to sundown Saturday as the Sabbath.

Two of the most colorful episodes in Adventist history revolve about Dr. J. H. Kellogg of Battle Creek, Mich., and Pitcairn Island of *Mutiny on the Bounty* fame. Based on prophecy in the books of *Daniel* and *Revelation*, Adventist history goes back to the Millerites and their prediction of 1843 as the year of the Advent, to the establishment of the first Seventh-day Adventist church at Buck's Bridge, N. Y., in 1855, to the emergence of Battle Creek as the denomination's center of activity in 1863 and, finally, to the move to new headquarters in Washington, D. C., in 1903.

Having sent their first missionary to Switzerland in 1847 and their first mission ship to Pitcairn in 1890, the Adventists are now established in 185 countries (including the U.S.S.R. and continental China), preach in 748 languages and dialects, circulate literature in 213 languages, operate 113 hospitals and sanitaria and 84 clinics and dispensaries

This two-level facility serves the dental teaching needs of the College of Medical Evangelists in Loma Linda, Calif.

An Adventist-Dentist Explains

Seventh-day Adventists believe that the health of the body is closely related to the spiritual welfare of the individual. The church, the denominational school, and the sanitarium comprise their concept of carrying on the preaching, teaching, and healing of Christ. Dentists are an integral part of the "Gospel Team" throughout the world.

As their name indicates, Seventh-day Adventists observe the Seventh-day Sabbath of the fourth commandment. They endeavor to "Keep ALL of the commandments" because they love God and humanity, NOT as a means of salvation.

World conditions today accentuate their firm belief in Bible prophecy, and its foretelling of the literal and now imminent second "Advent" of Christ to this earth. This explains in part their generous gifts to the church, and the urgency with which they proclaim their message.

As Christians, they are orthodox fundamentalists, and as dentists they endeavor to maintain high professional standards. The National Association of Seventh-day Adventist Dentists is one of the vehicles for the promotion of their objectives.

Statement by Gerald Mitchell, D.D.S., F.A.C.D., historian, NASDAD.

and can be heard in the United States through radio and TV network broadcasts. Most of the inhabitants of Pitcairn Island (British), descendents of one of the mutineers on H.M.S. Bounty, are Seventh-day Adventists.

Adventists do not dance, play cards or smoke. They do not drink alcoholic beverages, coffee or tea. Most are vegetarians. They dress simply, wearing only functional jewelry. In religion they are fundamentalists, rejecting Darwin's theory of evolution. Bathing the feet of fellow Adventists is part of their ritual. Ten years ago statistics showed three times as many college graduates among Adventists as the national average.

Three dental students at work in a Mexican village.

Appeasement of bodily ills is a starting point of Adventist church work. Dr. Kellogg, inventor of corn flakes, peanut butter, and other health foods, helped publicize Adventist health principles: sunlight, fresh air, simple diet (including fruit and vetetable salads) and discipline against overindulgence. One survey indicated that Adventists are less susceptible to cancer and heart disease. At his Battle Creek Sanitarium, which became world-famous, Dr. Kellogg combined normal hospital procedure with hydrotherapy, physical therapy, rest, exercise, mental hygiene, and so forth.

According to Hartzell Spence, Kellogg was expelled from the Church in 1907. The Sanitarium remained with Dr. Kellogg and about this time the Church reorganized and moved to Washington.

Because Adventists give more to their church than any other Protestant sect, because 5 percent are full-time employees of the Church, and because all Church employees (pastors, doctors, teachers) receive the same modest salary, few are wealthy.

In line with their beliefs, Adventists conduct extensive first-aid training programs, participate in disaster relief, have developed "survival and disaster kits," and have set up in their church schools "medical cadet corps." In the draft, they are classified 1-A-O and are eligible for non-combat jobs only.

The College of Medical Evangelists at Loma Linda, Calif., teaches nursing (1905), medicine (1909), and dentistry (1953) as its major courses, as well as medical technology, physical therapy, x-ray technology, tropical and preventive medicine, and dietetics.

The National Association of Seventh-day Adventist Dentists is, as the name implies, an organization of dentists devoted to furthering the aims and ideals of the Adventists, and destined to receive most of its future members from the Loma Linda dental school.

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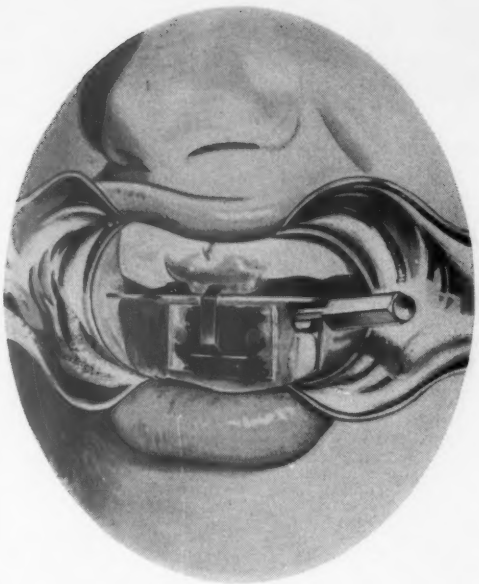

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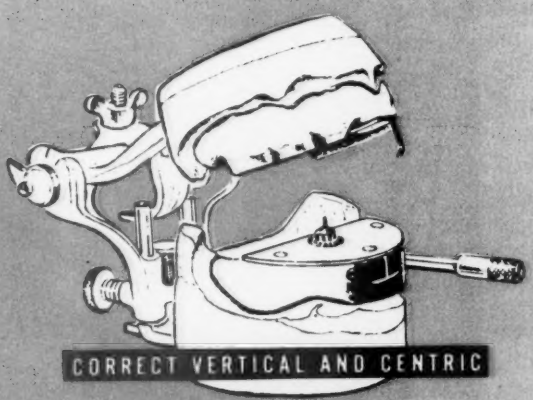

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